

ABSTRACT

A speaker device for emitting subsonic, sonic or ultrasonic compression waves comprising a generally hollow drum, a rigid emitter plate attached to the drum, and a plurality of apertures formed within the plate which are covered by a thin piezoelectric film disposed across the emitter plate. A pressure source is coupled to the drum for developing a biasing pressure with respect to the thin film at the apertures to distend the film into an arcuate emitter configuration capable of constricting and extending in response to variations in the applied electrical input at the piezoelectric film to thereby create a compression wave in a surrounding environment. Parametric ultrasonic frequency input is supplied to the piezoelectric film to propagate multiple ultrasonic frequencies having a difference component corresponding to the desired subsonic, sonic or ultrasonic frequency range.

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